

# Artillery in Europe

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THE following notes and impressions of the writer are the result of his recent presence in Europe, both on the western front and elsewhere. The observations made pertained particularly to artillery activities, and other matters outside of that sphere were merely incidental. The impressions obtained resulted from visits to training and school centres of the English artillery in England; to the schools, ammunition parks, ordnance repair shops, and operations of intelligence, balloon and airplane services behind the British lines in France; the operations of the artillery staffs at British Great Headquarters, Army Headquarters, Corps Headquarters, and Divisional Headquarters; also visits to all types of British artillery in position and firing, forward observing stations, and general scenes of activity at the front from Ypres to Armentières. This front was the scene of the successful Wytschaete-Messines attack on June 7 last and the further advance in this region since August 4 of this year. Embraced also in this visit was a trip to the French front in the vicinity of Rheims, covering the sector of Craonne–Moronvilliers.

The writer was particularly struck with the operations at the Wytschaete-Messines battle above referred to, as they constitute one of the most, if not the most, successful offensives of the Allies to date. This battle resulted in forcing back the German line for an average depth of two thousand yards, over a ten-mile front, and destroyed the southern face of the troublesome Ypres salient. It was accomplished with a minimum loss of men, which was due in a great measure to the power and efficiency of the British artillery, which after a seven-day bombardment, covering every objective in the area selected for assault, succeeded in overmastering the German artillery and causing the withdrawal of its guns. With its own divisional



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guns the British then formed, on the day of the assault, a rolling barrage and a standing barrage for its infantry. The infantry followed this rolling barrage, at a distance varying from fifty to one hundred yards, and captured the ground above described. It will be seen, then, what a controlling influence on any offensive the artillery exercises in this war. The French and British now possess a formidable artillery, both in numbers and efficiency, and it is still being augmented. Such an artillery is secured by the mobilization of all national industries to produce the matériel and the most thorough organization and training of the personnel. Our task is the same as that of the Allies.

Our present artillery organization is believed to be very satisfactory in many respects until we get beyond the regimental organization. We have yet to create the artillery staffs for the higher units. Abroad, the artillery staffs of the armies, corps, and divisions are quite numerous and might seem, when listed, to have an excessive number of officers, but in both British and French armies it can be safely said that there is not one too many officers to coördinate the complex activities of the artillery, especially during such an offensive as above described. Organizations for such staffs will undoubtedly be evolved for us. It is regretted that data on this subject must be excluded from an article such as this.

The subject of training or instruction is most important. The training of officers and men ceases only during the time when actually engaged at the front. Before going to the front there is intensive instruction for both the new officers and the new men. Immediately upon the withdrawal from the front for purposes of rest, selected officers and men are at once sent to various schools behind the lines and there instructed. This applies not only to the artillery, but to all branches of the army. Behind the French and British lines there are schools of application for every form of military activity. Every British army has its artillery school, and at this school officers are given the training which will keep them ready to employ the methods of

the "moving battle" (war of maneuver), as well as the methods of trench warfare. The article by Colonel Reilly in the April-June number of the JOURNAL described the French artillery school at Fontainebleau, giving some idea of the extent and thoroughness of just one phase of this training. It was the writer's privilege to visit and inspect this school thoroughly. It is sufficient to say that it turns out nine thousand fairly well-trained artillery officers a year. It is impossible to give here the results obtained by these intensive methods of instruction, but the writer can say that he has seen field batteries which were trained in three months from raw recruits. He saw them when they were ready to go to the front, at which time they conducted service practice and executed mounted drill in a very creditable manner. There is no doubt that a system which can turn out efficient troops in such a short time is a growth. By this time a great corps of instructors, drawn from officers who by reason of wounds or other disabilities are no longer fit for the front, is available for this work. Such a corps is lacking with us at present. By the return of officers to this country, after a certain service at the front, for duty as instructors, the work of instruction can be greatly expedited.

In the conduct of artillery operations, trench warfare has produced many changes. The normal appearance of a field battery in position is quite different from what one would expect, judged by the open battle methods taught in all armies before this war. The guns are kept in pits or surrounded by trees to such an extent that distant aiming points are impossible. No caissons are with the guns, the ammunition being in racks in the pits. These pits have little or no covering, usually only sufficient head covering to resist shrapnel or shell splinters. The limbers and horses are ordinarily one to two miles in the rear of the guns; the B.C. station, if such exists, is in the battery itself.

All observation of fire is made from the posts of the forward observing officers (F. O. O.'s), which are called observation positions (O. P.'s) and are in masked and carefully protected

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positions located near the first line of trenches. If possible they avoid putting the O. P. in the front line trenches themselves. These O. P.'s are connected by telephone with their batteries, and from them the fire is conducted, usually by the captain, during an important action. During "Peace Time War," as the English call the normal conditions along the front, the duty of F. O. O. is taken in turn by each of the battery officers for a certain length of time. This duty at times is, of course, extremely dangerous.

The personnel at the battery usually have dugouts constructed wherein they can take refuge when bombarded. It is expected that they take refuge in these dugouts whenever the battery is bombarded, unless they are engaged on some special or important gun service, such as delivery of a barrage. In such case they must remain at their posts, whatever may be the cost.

Over each gun is stretched a canopy of netting to which are tied tufts or strips of burlap painted green, yellow, and brown. These nets form the *camouflage* for the guns and diminish the chances of their detection by aerial observers. Every British light gun carries on it as part of its equipment one of these nets. Extra ammunition is scattered around everywhere in the vicinity of the battery ("dumps"). Every such "dump" is *camouflaged* with brush or by paulins thrown over them and painted the various colors required by that particular terrain. The art of *camouflage* is one of the most interesting products of this war. It calls to its service everything, from the work of artists and sculptors down to that of day laborers. It is regretted that this article cannot more fully describe its activities.

The wire communications of a battery in position are a very complex thing. There is frequently a telephone exchange in the B. C. station which makes it possible for the B. C. to talk to his division commander, to his battalion commander, to his F. O. O.'s, and to the commander of the infantry whose front he protects. To many of these officers he has alternative routes of communication besides the direct lines thereto. All telephone

wires are buried six to eight feet in the ground until the area of the trenches is reached, where, if it is no longer possible to bury them, they are pinned on to the sides of the trenches. All telephone lines in the trench area have the double metallic circuit, as the ground return permits the enemy to read all messages by means of detectors created for the purpose. For the same reason messages at the front are sent in buzzer code instead of by voice. Both sides forbid the use of spoken messages over the telephone where the lines are located in the trench district, except in the greatest emergencies.

It is not an uncommon sight in the posting of batteries to see the guns posted in tiers. The firing of artillery over personnel in its front is taken as a matter-of-course procedure. Batteries in the lower tier of guns usually have a parados in the rear of each gun as a partial protection from premature bursts of guns in the rear.

The writer cannot recall having seen the employment of a distant aiming point in any battery, light or heavy. The siting of the guns usually forbids this. The normal procedure seemed to be to establish the direction of the directing gun by the use of the map or compass bearings, then establish parallel fire in the battery and give each gun its own aiming post not more than fifty to one hundred yards away. Another method was to establish by some form of survey the line of fire for a sort of sight bar set up close beside a gun and then by means of a reflecting apparatus on the gun sight secure parallelism of the gun with the sight bar.

It will be seen, from the extent of the communication system of a battery, that a great number of men will be needed in the B. C. detail. British batteries, including signallers, have about twenty-one men. Our own details will have to be materially increased and signalling must be carefully taught, using all the various kinds of materials—large flag, small flag, telephone, buzzer, daylight lamp, daylight shutter, etc., depending upon conditions. Every known means of communication has been, and may often have to be, employed, including such things as

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rockets, flares, carrier pigeons and dogs. So great is the need for many and thoroughly expert signallers that every British battery endeavors to maintain a competent understudy for every signal man in the detail.

As regards the technique of firing, the following were noticed as among the most important features:

The widespread use of firing by the map;

The frequency of firing by compass;

The methods of conducting "airplane shoots" (conduct of fire from airplanes);

The calibration of guns to compensate for loss of muzzle velocity due to wear of the guns;

Corrections for atmospheric conditions;

Corrections for map's distortion.

It will be seen from the above that a large amount of the work of the guns partakes of the character of bull's-eye shooting, particularly when charged with the destruction of small material targets. At any rate, every precaution is taken to insure the shot falling in a small zone.

Three great kinds of work exacted of the artillery may conveniently be grouped as follows:

"Destructive shoots";

Counter battery work;

Barrages.

The "destructive shoot" is firing undertaken to demolish various hostile structures, such as firing trenches, communication trenches, wiring, dugouts, depots, dumps, etc. These "destructive shoots" may be performed by all classes of guns, but are usually the function of the heavier calibres. Counter battery work is usually the function of the heavy guns and howitzers. Like the subject of *camouflage*, a detailed description of the various activities of counter-battery work extends far beyond the scope of this article. The head of a counter-battery service calls to his aid for the location of hostile batteries the assistance of the intelligence, flash-spotting, balloon, airplane, and aerial photograph services, to say nothing of the map department.

He assigns to his batteries for destruction all targets located by the foregoing instrumentalities.

Barrage firing may be a curtain of fire which rolls along the ground at a predetermined rate. This is called the rolling barrage. Behind it marches our own infantry at such a sufficiently short distance that they are able, after a barrage has rolled over a trench, to rush into that trench before the defence can come up from their dugouts and line the parapet with their machine guns. It goes without saying that during the intensive bombardment the defence cannot remain in their fire trenches and live. They must take refuge in their dugouts.

The standing barrage is a curtain of fire which moves by a series of lifts or bounds, varying in amount, having some definite objective at each lift. Its principal duty is to bring fire to bear on certain areas in advance of the rolling barrage from which ruinous fire might be delivered upon our attacking infantry, as, for example, machine guns posted in suitable places and fired by indirect fire through our rolling barrage into our infantry. The standing barrage, by the use of smoke shell, also masks the progress of the attack from the enemy.

All barrage fire is a function of the divisional artillery. It seems well established that infantry, after proper artillery preparation, can advance under the cover of a well-regulated barrage, but its advance is limited to the range of the guns. When the extreme limit of the barrage has been attained the infantry must consolidate and wait until the guns can be pushed to the front. A multitude of details must be cared for when making the arrangements for barrage firing for a great attack. The coördination of these details finds its expression in the barrage maps prepared and issued by each corps and in the firing schedules prepared by every battery commander. In doing all the foregoing the need for the numerous high artillery staffs already spoken of becomes apparent. Once supplied with his barrage map, every battery commander must make out for each of his guns a time-table for firing in the barrage. This table is far more exacting than that of any railroad train,

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for every gun must during every designated minute of time fire a certain number of shots with a certain set of firing data different for various times.

The infantry in the front line trenches has a certain amount of divisional artillery told off to defend its front. Infantry in the front line trenches, which suspects an attack, sends in to its supporting artillery an S. O. S. call. Censure awaits any battery which fails to respond by fire within thirty seconds after the call is sent. The response has come in seventeen seconds. The fact that guns are, when not otherwise employed, always kept laid on their S. O. S. positions and that the sector for each gun is so small simplifies this performance somewhat.

Undoubtedly there will be evolved some "doctrine" of training for all our artillery, designed to give instruction in all that it is needful to know in this present war. It is believed that this instruction will involve the following subjects for artillery officers, some of which had not attained before the war the importance which they now have, viz.:

- More instruction in map and compass firing;
- The preparation of battery battle charts;
- The calibration of guns;
- Correction for atmospheric conditions;
- Greater proficiency of officers in all kinds of signalling;
- Aerial observation of fire;
- The conduct of fire at service practice from O. P.'s;
- Camouflage*;
- The preparation of barrage maps and time-tables;
- Methods of counter-battery work.

In the pursuit of these studies the instruction must never lose sight of the principles covering artillery in the open battle, as laid down in our drill regulations.